

**IN THE DRAWINGS**

Please amend FIG. 8 of the drawings to remove reference number 804 as shown in Exhibit A attached hereto, marked as a REPLACEMENT SHEET in accordance with 37 C.F.R. § 1.84.

Please amend FIG. 10 of the drawings to include reference number 1003 as shown in Exhibit B attached hereto, also marked as a REPLACEMENT SHEET in accordance with 37 C.F.R. § 1.84.

Please add FIG. 13 to the drawings, as shown in Exhibit C attached hereto, marked as NEW SHEET pursuant to 37 C.F.R. § 1.121.

**REMARKS**

Claims 43-99 are pending in the current application. Applicants have amended certain passages in the specification, two drawings, and added one drawing to the application. Applicants have further amended claims 43, 49, 55, 61, 65, 78, and 90. Reexamination and reconsideration of all pending claims are respectfully requested.

***Drawings/Specification***

Applicants have amended the drawings, specifically FIG. 8, to remove reference number 804.

Regarding the term “immersion substance” or “immersion liquid,” Applicants note that since such a substance is a liquid, it is not readily depicted in drawings. Applicants further note that Table 6 and Table 7 both include the material IMMERSION FLUID and can be correlated directly to FIGs. 10 and 11, respectively. Further, the Specification expressly states that “[f]rom FIG. 10, the space between specimen 1001 and Mangin mirror element 1002 is filled by the immersion substance or immersion fluid.” Specification, page 36, ll. 16-18. Nonetheless, in order to address the concerns presented, Applicants have amended FIG. 10 and the Specification to call out the immersion substance or immersion liquid. No new matter has been added.

The Office Action objected to the drawings based on an alleged lack of a microscope and associated elements in the drawings. Applicants respectfully respond by stating that, as with the immersion substance or immersion liquid, the disclosure in the specification is sufficient for one of ordinary skill to make and use the invention, and submits that not all concepts must be disclosed in the drawings, and the statement formerly at page 19 of the specification sufficiently details the relationship between the microscope, flange, and objective and the spacing between flange and specimen. Further detail in the form of a drawing is believed not required such that the specification may be understood by one skilled in the art.

Nonetheless, in an effort to provide support in the drawings and facilitate full allowance of the present application, Applicants have visually supplemented the statement at page 18 with newly added FIG. 13, labeled as a new sheet. Applicants submit that addition of the conceptual drawing of FIG. 13 including a microscope and a flange is not an addition of new matter, as sufficient support existed in the specification for the microscope, flange, and other elements shown in FIG. 13.

Applicants therefore respectfully submit that the application and drawings fully conform with 37 CFR §§ 1.83 and 1.121, and that no new matter has been added to the application.

### ***Claim Objections***

The Office Action objected to certain claims wherein a single glass material was recited in the preamble of two pending independent claims and certain dependent claims recited two glass materials. Applicants have amended dependent claims 49 and 61 to state that the respective objective is constructed of two or no more than two glass materials. Applicants submit that these amendments provide a proper recitation of the material and materials employed in the design(s), and that all claims, as amended, now fully comply with 37 C.F.R. § 1.75.

### ***Double Patenting***

The Office Action indicates two bases for issuing provisional obviousness type double patenting rejections: an alleged double patenting between claims wholly included in the present application, and double patenting based on co-pending U.S. Patent Application 10/434,374 in combination with certain other references, U.S. Patent 4,108,794 to Yonekubo (“Yonekubo”) or U.S. Patent 5,825,043 to Suwa (“Suwa”).

#### **Rejection based on claims within the Application**

Regarding the double patenting of claims in the present application, Applicant has amended claim 55 to specifically include limitations that differ from the limitations of claim

43. Based on this amendment, Applicants submit that no double patenting exists for claims 55,-56, 59-60, 64, and 67 in view of the other claims in the application.

Regarding claim 90, Applicants respectfully submit that claim 90 materially differs from claims 43 and amended claim 55 of the present application. Claim 90 omits the requirements of claim 43 that (1) the at least one focusing lens claimed have any particular dimensional limitation (claim 43 recites less than approximately 100 millimeters); and (2) the at least one field lens have a particular dimensional limitation (claim 43 recites less than approximately 100 millimeters). This difference in scope is sufficient to obviate any double patenting issue, particularly considering the statement in M.P.E.P. 706.03(k) that:

court decisions have confirmed applicant's right to restate  
(i.e., by plural claiming) the invention in a reasonable number of  
ways. Indeed, a mere difference in scope between claims has been  
held to be enough [to overcome a double patenting rejection].

Applicants thus respectfully submit that no double patenting exists within the present claims, as amended.

*Rejection based in part on co-pending U.S. Patent Application 10/434,374*

With respect to the obviousness type double patenting rejection based on co-pending U.S. Patent Application 10/434,374, Applicants do not believe that double patenting exists with respect to the '374 application, as the present design and claims are not merely an obvious extension of the '374 application.

Double patenting is typically assessed using the cross-readability test, which has been applied by determining whether one of the claims could be literally infringed without literally infringing the other. If it could be, the claims do not define identically the same invention. *In re Vogel*, 422 F.2d 438, 164 U.S.P.Q. 619 (CCPA 1970); *Shelcore, Inc. v. Durham Industries, Inc.*, 745 F.2d 621, 223 U.S.P.Q. 584 (Fed. Cir. 1984). Here, viewing the pending claims of the present application against the pending claims of the '374 application, the difference is most clearly the use of the immersion

fluid required by all claims of the present application. Use of an immersion fluid is neither discussed, disclosed, required, nor claimed in the '374 application.

After the cross-readability test, the second question in determining whether obviousness type double patenting exists is whether a claim in the application is merely an obvious variation of an invention disclosed in the patent. *In re Vogel*, 422 F.2d 438, 164 U.S.P.Q. 619 (CCPA 1970), *citing In re Boylan*, 55 C.C.P.A. 1041, 392 F.2d 1017, 157 U.S.P.Q. 370 (1968) and *In re Aldrich*, 55 C.C.P.A. 431, 398 F.2d 855, 158 U.S.P.Q. 311 (1958). In determining whether a claim is an obvious variation of a claimed invention, the disclosure may be employed to a limited extent. ("The disclosure sets forth at least one tangible embodiment within the claim, and it is less difficult and more meaningful to judge whether that thing has been modified in an obvious manner. ... [O]nly the disclosure of the invention claimed in the patent may be examined." *In re Vogel*, 422 F.2d at 442, 164 U.S.P.Q. at 622).

Regarding differences between the present designs and claims, Applicants note that the physical dimensions, placement, and constructions of the lenses in the present design materially differ from those of the '374 application. In particular, applicants note the presence of 912, 1002, and 1102 in the present application, where no reasonably similar counterparts are present in the drawings of the '374 application. Applicants submit that one cannot simply use an existing objective design and place immersion fluid at some point in the design and hope to realize adequate or even remotely reasonable objective performance, particularly in the wavelength ranges claimed. Simply plugging in immersion fluid to an existing design, such as the '374 design, will not work without significant redesign and undue experimentation, if such a design could work at all. Further, there is no call for the use of immersion fluid in the '374 application, and there is no call for the specific lensing claimed (focusing, field, Mangin mirror, having specific dimensions in certain claims) in an objective that operates in the 157 nm through the infrared light range in either of the cited supplemental references, Yonekubo or Suwa.

It simply would not be obvious to employ an immersion fluid with the '374, for as shown in the '374 drawings, the components are materially different and could not simply operate successfully with an immersion fluid located at some point in the objective lens designs presented. With no motivation to combine the references suggested or present in the references themselves, and with specific claimed elements missing from the references separately, and further based on the differences between the lenses employed in the '374 drawings and those of the present design, the present claims do not represent a mere obvious variation of the '374 application, either alone or in combination with the cited references.

***35 U.S.C. § 103***

The Office Action rejected claims 43-49, 50-51, 53-56, 58-74, 76-86, 88-91, and 93-99 under 35 U.S.C. §103 based on U.S. Patent Application 2001/0040722 to Shafer et al. ("Shafer 722") in view of Yonekubo or Suwa. The Office Action further rejected claims 52, 75, and 87 under 35 U.S.C. §103 based on Shafer in view of Yonekubo or Suwa and further in view of Deutsch et al, WO 01/57563.

Applicants have amended independent claims 43, 55, 65, 78, and 90 to state that the Mangin mirror element receives "said intermediate light energy through a back side thereof" (claim 43) or "receiving said intermediate light energy through an optical element" (claim 65) or a variation thereof. Shafer 722 shows a design wherein the Mangin mirror element does not have light energy passing therethrough, or through a back side thereof, but merely reflecting from the element. See, Shafer 722, FIG. 3. Applicants submit that this is sufficient to distinguish the present claims over the cited references.

Further, as noted above with respect to double patenting, Applicants dispute the contention that the present design is obvious in view of Shafer 722 in combination with Yonekubo or Suwa. Shafer 722 does not discuss the use of an immersion liquid or substance, and neither Yonekubo nor Suwa disclose nor suggest the unique properties associated with the present design. Also, as noted above, one could not simply place an

immersion substance within the Shafer 722 design and obtain an objective design having the beneficial aspects presently claimed or operating with any level of adequate performance.

There is simply no suggestion in Shafer 722 to employ an immersion liquid or substance, and no motivation in Yonekubo or Suwa to use an immersion liquid or substance in a complex lensing design comprising, for example, field lenses, focusing lenses, and Mangin mirror arrangements having components less than 100 millimeters in diameter. The Office Action states the motivation to combine references being that immersion substances provide “better imaging performance,” and suggesting it would have been obvious “to use a well known immersion substance with the objective of Shafer et al. to provide better imaging performance.” Again, use of an immersion substance with Shafer 722 would not improve imaging performance without extensive redesign of all components and undue amounts of experimentation. No motivation to combine the references is presented beyond alleged simple plugging in of the Yonekubo or Suwa immersion substances into the Shafer 722 design.

The Federal Circuit has held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. *ACS Hospital System, Inc. v. Montefiore Hospital*, 732 F.2d 1572 (Fed. Cir. 1984). Without some showing in the prior art that suggests in some way a combination in order to arrive at the claimed invention, it is impermissible to use the Applicant’s teaching to search references for the claimed elements and combine them as claimed. *In Re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991); *In Re Laskowski*, 871 F.2d 115, 117 (Fed. Cir. 1989); *see also, Ex Parte Lange*, 72 U.S.P.Q. 90, 91 (C.C.P.A. 1947) (“It seems to us that the Examiner is using appellant’s disclosure for the suggestion of the combination since there is no suggestion in any of the patents for their combination in the manner claimed by Applicant.”); *In re Leonor*, 158 U.S.P.Q. 20, 21 (C.C.P.A. 1968) (the issue is “whether teachings of prior art would, of themselves, and without benefit of applicant’s disclosure, suggest [a process] which would make claimed invention obvious...” (emphasis in original)). As noted, the Shafer 722 reference does not

suggest combining the design disclosed with the immersion substances of Yonekubo or Suwa to produce the unique objective design claimed. As also noted, neither the Yonekubo reference nor the Suwa reference suggest combining the designs in the manner suggested to form the invention claimed in the present independent claims.

Applicants respectfully submit that the Examiner has used hindsight in rejecting the claims herein. It is only through hindsight, after seeing Applicants' disclosure, that it would be considered possible to create the objective claimed by the Applicants.

With regard to the use of hindsight, or the use of an Applicant's teaching to combine references, the courts have overwhelmingly condemned such combinations and have upheld the validity of patents or claims of patents in which such hindsight was employed to combine the references. *W.L. Gore Associates, Inc. v. Garlock, Inc.*, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983), (condemning the "insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher"); *In re Fine*, 837 F.2d 1044, 1051 (Fed. Cir. 1988) ("One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.")

Applicants respectfully submit that combining the immersion substance of Yonekubo or Suwa with the Shafer 722 design is merely a hindsight reconstruction of the invention using Applicants' disclosure and claims as a guide. Such hindsight reconstruction of the claimed system is inappropriate and thus rejection of independent claims 43, 55, 65, 78, and 90 in this manner is improper.

For the foregoing reasons, Applicants thus respectfully submit that claims 43, 55, 65, 78 and 90 are allowable over the references of record, and that all claims dependent from these allowable independent claims are allowable as they depend from an allowable base claim.

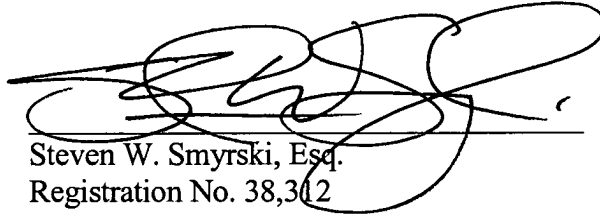


**CONCLUSION**

In view of the foregoing, it is respectfully submitted that all claims of the present application are in condition for allowance. Reexamination and reconsideration of all of the claims, as amended, are respectfully requested and allowance of all the claims at an early date is solicited.

Applicants believe that no fees are due in accordance with this Response beyond those included herewith. Should any fees be due, the Commissioner is hereby authorized to charge any deficiencies or credit any overpayment to Deposit Account 502026.

Respectfully submitted,



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